

Claims

1. An amine recovery method for recovering an amine compound accompanying a decarbonated exhaust gas by bringing the decarbonated exhaust gas into vapor-liquid contact with washing water in a water washing section, the decarbonated exhaust gas having had carbon dioxide absorbed and removed by vapor-liquid contact with an absorbing solution containing the amine compound in a carbon dioxide absorption section, characterized in that

the water washing section is constituted in a plurality of stages, and

recovery of the amine compound accompanying the decarbonated exhaust gas is performed sequentially in the water washing sections in the plural stages.

2. The amine recovery method of claim 1, characterized in that

regeneration tower refluxed water is supplied as washing water to the water washing section.

3. The amine recovery method of claim 1 or 2, characterized in that

washing water is withdrawn from the water washing section in the succeeding stage and supplied to the water washing section in the preceding stage.

4. The amine recovery method of claim 1, 2 or 3, characterized in that

demisters are provided at outlets of the carbon dioxide absorption section and the water washing sections in the respective stages, and

an absorbing solution mist and a washing water mist accompanying the decarbonated exhaust gas are removed by the demisters.

5. An amine recovery apparatus for recovering an amine compound accompanying a decarbonated exhaust gas by bringing the decarbonated exhaust gas into vapor-liquid contact with washing water in a water washing section, the decarbonated exhaust gas having had carbon dioxide absorbed and removed by vapor-liquid contact with an absorbing solution containing the amine compound in a carbon dioxide absorption section, characterized in that

the water washing section is constituted in a plurality of stages, and

recovery of the amine compound accompanying the decarbonated exhaust gas is performed sequentially in the water washing sections in the plural stages.

6. The amine recovery apparatus of claim 5, characterized in that

regeneration tower refluxed water is supplied as washing water to the water washing section.

7. The amine recovery apparatus of claim 5 or 6, characterized in that

washing water is withdrawn from the water washing section in the succeeding stage and supplied to the water washing section in the preceding stage.

8. The amine recovery apparatus of claim 5, 6 or 7, characterized in that

demisters are provided at outlets of the carbon dioxide absorption section and the water washing sections in the respective stages, and

an absorbing solution mist and a washing water mist accompanying the decarbonated exhaust gas are removed by the demisters.

9. A decarbonation apparatus characterized by having the amine recovery apparatus of claim 5, 6, 7 or 8 in an absorption tower.